

Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims

Claim 1 (Previously presented): A method for preparing a conjugate vaccine, the method comprising:

reacting a polysaccharide with an oxidizing agent, whereby a solution of an aldehyde-activated polysaccharide is obtained;

buffer exchanging the solution of the aldehyde-activated polysaccharide to a pH of from about 7 to about 8;

reacting a protein with hydrazine or adipic acid dihydrazide in the presence of 1-[3-(dimethylamino)propyl]-3-ethyl carbodiimide hydrochloride at a pH of from about 6 to about 7, whereby a solution of an hydrazide-activated protein is obtained;

raising a pH of the solution of the hydrazide-activated protein to from about 7.0 to about 11;

buffer exchanging the solution of the hydrazide-activated protein to a pH of from about 10.0 to about 11.0;

reacting the aldehyde-activated polysaccharide with the hydrazide-activated protein at a pH of from about 6 to about 8, whereby a conjugate comprising one or more C=N double bonds is obtained; and

reducing the C=N double bonds of the conjugate to C—N single bonds, whereby a conjugate vaccine capable of stimulating an immune response is obtained.

Claim 2 (Original): The method according to claim 1, wherein the oxidizing agent comprises NaIO₄.

Claim 3 (Original): The method according to claim 1, wherein the solution of the aldehyde-activated polysaccharide is buffer exchanged with a HEPES buffer.

Claim 4 (Original): The method according to claim 1, wherein the solution of the hydrazide-activated protein is buffer exchanged with a Na_2CO_3 buffer.

Claim 5 (Original): The method according to claim 1, wherein the aldehyde-activated polysaccharide is reacted with the hydrazide-activated protein at a ratio of from about 1:2 to about 2:1.

Claim 6 (Original): The method according to claim 1, wherein reducing comprises reducing with NaBH_4 .

Claim 7 (Original): The method according to claim 1, wherein the polysaccharide is selected from the group consisting of Meningococcal polysaccharides, Pneumococcus polysaccharides, *Hemophilus influenzae* type b polysaccharide, Vi polysaccharide of *Salmonella typhi*, and group B *Streptococcus* polysaccharides.

Claim 8 (Previously presented): The method according to claim 1, wherein the protein is selected from the group consisting of tetanus toxoid, diphtheria toxoid, CRM₁₉₇, and meningococcal protein.

Claims 9-18 (Canceled)

Claim 19 (Original): A conjugate vaccine, the conjugate vaccine comprising at least one polysaccharide moiety and at least one protein moiety, wherein the polysaccharide moiety is linked to the protein moiety through at least one linking group of the formula
 $-\text{C}(=\text{O})-\text{NH}-\text{NH}-\text{CH}_2-$.

Claim 20 (Original): The conjugate vaccine of claim 19, wherein the conjugate vaccine comprises a plurality of polysaccharide moieties and a plurality of protein moieties crosslinked to form a lattice structure by a plurality of linking groups.

Claim 21 (Previously presented): The conjugate vaccine of claim 19, wherein the polysaccharide is selected from the group consisting of Meningococcal polysaccharides, *Pneumococcus* polysaccharides, *Hemophilus influenzae* type b polysaccharide, Vi polysaccharide of *Salmonella typhi*, and group B *Streptococcus* polysaccharides.

Claim 22 (Previously presented): The conjugate vaccine of claim 19, wherein the protein is selected from the group consisting of tetanus toxoid, diphtheria toxoid, CRM₁₉₇, and meningococcal protein.

Claims 23-32 (Canceled)

Claim 33 (Previously presented): The conjugate vaccine of claim 19, wherein the polysaccharide moiety is exclusively linked to the protein moiety through the at least one linking group of the formula $\text{—C(=O)—NH—NH—CH}_2\text{—}$.

Claim 34 (Previously presented): The conjugate vaccine of claim 19, wherein the conjugate vaccine elicits an immune response.

Claim 35 (Previously presented): The method of claim 1, wherein the solution of the hydrazide-activated protein is buffer-exchanged at a pH of 10.5.

Claim 36 (Previously presented): The method of claim 1, wherein the solution of the hydrazide-activated protein is buffer-exchanged at a pH of 11.

Claim 37 (Previously presented): The method of claim 1, wherein the solution of the hydrazide-activated protein is buffer-exchanged with a buffer concentration of 3mM to 10mM.

Claim 38 (Previously presented): The method of claim 1, wherein the solution of the aldehyde-activated polysaccharide is buffer-exchanged with a buffer concentration of 100 mM to 200 mM.

Claim 39 (Previously presented): The method of claim 1, wherein the protein is reacted with hydrazine or adipic acid in the presence of MES.

Claim 40 (New): The method of claim 1 wherein the method does not include the use of sodium cyanoborohydride.